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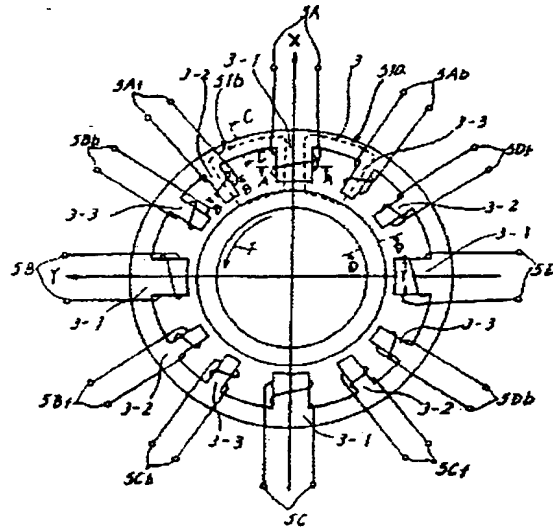
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TITLE : RADIAL MAGNETIC BEARING DEVICE



ABSTRACT : PURPOSE: To obtain a radial magnetic bearing device which can rotate at a high speed with small size by providing three poles at an electromagnet facing one control axial direction, and doubling the sectional area of the central pole to that of the poles at both sides.

CONSTITUTION: The number of poles of rectangular sectional shape to which an exciting coil protruding toward a rotor oppositely to the rotor of a radial magnetic bearing stator is three per one electromagnet facing one control axial direction. The circumferential sectional area of a central pole 3-1 of the three poles is substantially doubled by those of the poles 3-2, 3-3 at both sides to divide the lines of magnetic flux generated in the electromagnet into the lines 51a, 15b of magnetic flux. Accordingly, the magnetic fluxes of the poles 3-2, 3-3, a stator yoke 3, a rotor yoke 4 become 1/2 of the magnetic flux of the pole 3-1. Thus, the rotor and the stator may be so formed that the magnetic flux densities thereof become the same. Therefore, the radial thicknesses of the yokes 3, 4 are set to 1/2 of the circumferential width T of the pole 3-1, the outer diameter of the rotor and the outer diameter of the stator are reduced by 2T.

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